

## Basin Risk Indicators - Descriptions, Sources and Links

Risk type	Risk category	#	Risk indicator	Description	Source	Link
Physical Risk	1. Water Scarcity	1.0	Aridity Index	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		1.1	Annual Average Water Available for Abstraction	Water resources availability at average river flows (Q50) assessed in 2014. Each river in England is assessed to determine the minimum amount of flow required to maintain the ecological health of the river. The status of the river then depends on whether current abstractions allow this minimal flow to be maintained throughout the year. Source: Environment Agency. In Scotland score relate to WFD hydrology (abstraction) status: Bad(5), Poor(4), Moderate(3), Good(2) and High (1).	England: Environment Agency  Wales: Environment Agency and Natural Resources Wales  Scotland: Scottish Environmental Protection Agency	England: <a href="http://www.geostore.com/environment-agency/">http://www.geostore.com/environment-agency/</a>  Wales: <a href="mailto:accesstoinformatio@naturalresourceswales.gov.uk">accesstoinformatio@naturalresourceswales.gov.uk</a>  Scotland: <a href="http://www.sepa.org.uk/water/monitoring_and_classification/classification/classification_results.aspx">http://www.sepa.org.uk/water/monitoring_and_classification/classification/classification_results.aspx</a>
		1.2	Annual Reliability of Abstraction	New, consumptive abstraction may not be 100% reliable. Reliability information is based on CAMS resource availability and is a way of presenting the reliability of new abstractions at all flows. The availability of water for abstraction within a river varies greatly from high to low flows. By assessing the quantity of water available at different flows it is possible to see when there is a surplus or deficit of water and the associated reliability of an abstraction.	England: Environment Agency  Wales: NA  Scotland: NA	England: <a href="http://www.geostore.com/environment-agency/">http://www.geostore.com/environment-agency/</a>
	1.3	Water Available for Abstraction at the Driest Period of the Year	Water resources availability at low river flows (Q95) assessed in 2012. Each river is assessed to determine the minimum amount of flow required to maintain the ecological health of the river. The status of the river then depends on whether abstractions allow this minimal flow to be maintained throughout the year.	England: Environment Agency  Wales: Environment Agency and Natural Resources Wales  Scotland: Scottish Environmental Protection Agency	England: <a href="http://www.geostore.com/environment-agency/">http://www.geostore.com/environment-agency/</a>  Wales: <a href="mailto:accesstoinformatio@naturalresourceswales.gov.uk">accesstoinformatio@naturalresourceswales.gov.uk</a>  Scotland: <a href="http://www.sepa.org.uk/water/monitoring_and_classification/classification/classification_results.aspx">http://www.sepa.org.uk/water/monitoring_and_classification/classification/classification_results.aspx</a>	

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		1.4	Projected Change in Water Discharge	The percentage change in summer rainfall per river basin is based on the medium emission scenario for 2050. The 50%ile change does not vary greatly across the UK, -0% to -2% reduction in summer rainfall, and as a result the UK dataset provides little additional spatial data.	UKCIP09	<a href="http://ukclimateprojections.metoffice.gov.uk/21708">http://ukclimateprojections.metoffice.gov.uk/21708</a>
		1.5	Drought Frequency Probability	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		1.6	Projected Change in Drought Occurrence	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
	<b>2. Flooding</b>	2.1	Estimated Flood Occurrence	The data shows the floodplain in England and Wales split into 50m x 50m cells, each one allocated to one of four flood risk likelihood categories with respect to flooding from rivers and sea. The four flood risk likelihood categories are: (i) High: each year, there is a chance of flooding of greater than 1 in 30 (3.3%). (ii) Medium: each year, there is a chance of flooding of between 1 in 30 (3.3%) and 1 in 100 (1%). (iii) Low: each year, there is a chance of flooding of between 1 in 100 (1%) and 1 in 1000 (0.1%). (iv) Very Low: each year, there is a chance of flooding of less than 1 in 1000 (0.1%).	England: Environment Agency  Wales: Environment Agency and Natural Resources Wales.	<a href="http://www.geostore.com/environment-agency/">http://www.geostore.com/environment-agency/</a>
		2.2	Projected Change in Flood Occurrence	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
	<b>3. Water Quality</b>	3.1	Surface Water Quality Index	The Surface Water Quality Index is based on the highest value among the sub-indicators (3.1.1 to 3.1.9)	Multiple sources. See below.	
		3.1.1	Nitrogen loading	<i>England: Areas that are vulnerable to nitrate pollution including land draining to surface water, groundwater and eutrophic waters (2012). The designations are based on monitoring and pressure data and as such represent risk rather than vulnerability.</i>  <i>Wales: Areas that are vulnerable to nitrate pollution including land draining to surface water, groundwater and eutrophic waters (2013). The designations are based on monitoring and pressure data and as such represent risk rather than vulnerability.</i>	England: Environment Agency  Wales: Environment Agency and Natural Resources Wales  Scotland: Scottish Government	England: <a href="http://www.magic.gov.uk/Datasets/Dataset_Download_NitrateVulnerable.htm">http://www.magic.gov.uk/Datasets/Dataset_Download_NitrateVulnerable.htm</a>  Wales: <a href="mailto:accesstoinformation@naturalresourceswales.gov.uk">accesstoinformation@naturalresourceswales.gov.uk</a>  Scotland: <a href="http://crtb.sedsh.gov.uk/spatialDataDownload/dload.asp">http://crtb.sedsh.gov.uk/spatialDataDownload/dload.asp</a>

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		3.1.2	Phosphorus loading	The WFD assessment of phosphorus concentrations in rivers is a supporting element for the assessment of river ecological status (2014, Cycle II).	<p>England: Environment Agency</p> <p>Wales: Environment Agency and Natural Resources Wales</p> <p>Scotland: Scottish Environmental Protection Agency</p>	<p>England: <a href="http://www.geostore.com/environment-agency/">http://www.geostore.com/environment-agency/</a></p> <p>Wales: <a href="mailto:accesstoinformation@naturalresourceswales.gov.uk">accesstoinformation@naturalresourceswales.gov.uk</a></p> <p>Scotland: <a href="http://www.sepa.org.uk/water/monitoring_and_classification/classification/classification_results.aspx">http://www.sepa.org.uk/water/monitoring_and_classification/classification/classification_results.aspx</a></p>
		3.1.3	Pesticide loading	The Pesticide usage survey records the average pesticide load per hectare used in each region within the UK.	Fera Science Ltd	<a href="https://secure.fera.defra.gov.uk/pusstats/">https://secure.fera.defra.gov.uk/pusstats/</a>
		3.1.4	Soil salination	Soil salination index, based on global modelling.	Vörösmarty, C. J., McIntyre, P. B., Gessner, M. O., Dudgeon, D., Prusevich, A., Green, P., ... & Davies, P. M. (2010). Global threats to human water security and river biodiversity. Nature, 467(7315), 555.	<a href="https://www.nature.com/articles/nature09440">https://www.nature.com/articles/nature09440</a>
		3.1.5	Organic loading	The WFD assessment of BOD in rivers is a supporting element for the assessment of river ecological status (2014, Cycle II). The BOD status of each catchment is assessed for the Water Framework Directive using the UKTAG methodology.	<p>England: Environment Agency</p> <p>Wales: Environment Agency and Natural Resources Wales</p> <p>Scotland: Scottish Environmental Protection Agency</p>	<p>England: <a href="http://www.geostore.com/environment-agency/">http://www.geostore.com/environment-agency/</a></p> <p>Wales: <a href="mailto:accesstoinformation@naturalresourceswales.gov.uk">accesstoinformation@naturalresourceswales.gov.uk</a></p> <p>Scotland: <a href="http://www.sepa.org.uk/water/monitoring_and_classification/classification/classification_results.aspx">http://www.sepa.org.uk/water/monitoring_and_classification/classification/classification_results.aspx</a></p>

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		3.1.6	Sediment loading	Sediment loading index, based on global modelling.	Vörösmarty, C. J., McIntyre, P. B., Gessner, M. O., Dudgeon, D., Prusevich, A., Green, P., ... & Davies, P. M. (2010). Global threats to human water security and river biodiversity. <i>Nature</i> , 467(7315), 555.	<a href="https://www.nature.com/articles/nature09440">https://www.nature.com/articles/nature09440</a>
		3.1.7	Mercury loading	Mercury loading index, based on global modelling.	Vörösmarty, C. J., McIntyre, P. B., Gessner, M. O., Dudgeon, D., Prusevich, A., Green, P., ... & Davies, P. M. (2010). Global threats to human water security and river biodiversity. <i>Nature</i> , 467(7315), 555.	<a href="https://www.nature.com/articles/nature09440">https://www.nature.com/articles/nature09440</a>
		3.1.8	Potential acidification	The WFD assessment of pH in rivers is a supporting element for the assessment of river ecological status (2014, Cycle II). The pH status of each catchment is assessed for the Water Framework Directive using the UKTAG methodology.	<p>England: Environment Agency</p> <p>Wales: Environment Agency and Natural Resources Wales</p> <p>Scotland: Scottish Environmental Protection Agency</p>	<p>England: <a href="http://www.geostore.com/environment-agency/">http://www.geostore.com/environment-agency/</a></p> <p>Wales: <a href="mailto:accesstoinformatio@naturalresourceswales.gov.uk">accesstoinformatio@naturalresourceswales.gov.uk</a></p> <p>Scotland: <a href="http://www.sepa.org.uk/water/monitoring_and_classification/classification_results.aspx">http://www.sepa.org.uk/water/monitoring_and_classification/classification_results.aspx</a></p>
		3.1.9	Thermal alteration	The WFD assessment of temperature in rivers is a supporting element for the assessment of river ecological status (2014). The temperature status of each catchment is assessed for the Water Framework Directive using the UKTAG methodology.	<p>England: Environment Agency</p> <p>Wales: Environment Agency and Natural Resources Wales</p> <p>Scotland: Scottish Environmental Protection Agency</p>	<p>England: <a href="http://www.geostore.com/environment-agency/">http://www.geostore.com/environment-agency/</a></p> <p>Wales: <a href="mailto:accesstoinformatio@naturalresourceswales.gov.uk">accesstoinformatio@naturalresourceswales.gov.uk</a></p> <p>Scotland: <a href="http://www.sepa.org.uk/water/monitoring_and_classification/classification/classification_results.aspx">http://www.sepa.org.uk/water/monitoring_and_classification/classification_results.aspx</a></p>

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	<b>4. Ecosystem Services Status</b>	<b>4.1</b>	Cumulative threat index to freshwater ecosystem services (biodiversity)	The ecological status of each catchment is assessed for the Water Framework Directive using the UKTAG methodology. (2014 Cycle II)	<p>England: Environment Agency</p> <p>Wales: Environment Agency and Natural Resources Wales</p> <p>Scotland: Scottish Environmental Protection Agency</p>	<p><a href="#">ssification_results.a spx</a></p> <p>England: <a href="http://www.geostore.com/environment-agency/">http://www.geostore.com/environment-agency/</a></p> <p>Wales: <a href="mailto:accesstoinformationteam@naturalresourceswales.gov.uk">accesstoinformationteam@naturalresourceswales.gov.uk</a></p> <p>Scotland: <a href="http://www.sepa.org.uk/water/monitoring_and_classification/classification/classification_results.a spx">http://www.sepa.org.uk/water/monitoring_and_classification/classification/classification_results.a spx</a></p>
		<b>4.2</b>	Catchment Ecosystem Services Degradation Level	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		<b>4.3</b>	Projected Impacts on Freshwater Biodiversity	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
<b>Regulatory Risk</b>	<b>5. Enabling Environment</b>	<b>5.1</b>	Freshwater Policy Status (SDG 6.5.1)	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		<b>5.2</b>	Freshwater Law Status (SDG 6.5.1)	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		<b>5.3</b>	Implementation Status of Water Management Plans (SDG 6.5.1)	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
	<b>6. Institutions &amp; Governance</b>	<b>6.1</b>	Corruption Perceptions Index	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		<b>6.2</b>	Freedom in	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		

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			the World Index			
		6.3	Business Participation in Water Management (SDG 6.5.1)	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
	7. Management Instruments	7.1	Management Instruments for Water Management (SDG 6.5.1)	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		7.2	Groundwater Monitoring Data Availability and Management	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		7.3	Density of Runoff Monitoring Stations	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
	8. Infrastructure & Finance	8.1	Access to Safe Drinking Water	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		8.2	Access to Sanitation	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		8.3	Financing for Water Resource Development and Management (SDG 6.5.1)	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
Reputational Risk	9. Cultural Importance	9.1	Cultural Diversity	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
	10. Biodiversity Importance	10.1	Freshwater Endemism	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		10.2	Freshwater Biodiversity Richness	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
	11. Media Scrutiny	11.1	National Media	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		

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		11.2	Global Media Coverage	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
	12. Conflict	12.1	Conflict News Events	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		
		12.2	Hydro-political Likelihood	<a href="#">See Global Documentation on Indicators, Sources and Description</a>		